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spot thus agreeing with *coffeella* and differing from *susinella*. Since the description of *albella* was written I have obtained many specimens and find a greater range of variation than I then supposed to exist. In some specimens the golden margin around the spot is only visible in some lights, in others it is distinct and wide, so as to be confluent with both golden costal streaks, and I have a specimen in which this is the case as to one wing, whilst on the other both streaks are entirely distinct from the golden margin of the spot. If the same range of variation exists in *coffeella* and *susinella* I do not see how they can be regarded as distinct species, nor wherein they differ from *albella* except that in *albella* the ciliary streak is golden, except on the costa where it is fuscous, whilst in the other two species it is said to be entirely fuscous. Possibly, however, they may differ as to the spot itself. For Mr. Stainton says that in *susinella* the spot is black with a violet ocellus, whilst in *albella*, although the color varies with every change of the light, I would not call the central part of the spot an ocellus at all, nor its color violet; but would rather consider the spot as brilliant silvery, or silvery-gray, metallic, margined distinctly with black before and behind, and but faintly or not at all above and beneath. I doubt, however, the specific difference of the specimens, and if they are distinct the difference can probably only be determined by a comparison of a large series of specimens of each.—V. T. C.

GEOLOGY.

PROBOSCIDIANS OF THE AMERICAN EOCENE. CORRECTION.—Having for the first time obtained a view of the premaxillary and maxillary bones of the *Eobasileus cornutus*, I find that the tusk which I have called an incisor is a canine.—E. D. COPE.

RETURN OF THE YALE COLLEGE EXPEDITION.—Professor Marsh and party returned on the 7th of December from the Rocky Mountains, where they have spent the last two months in geological researches. They bring back a large number of vertebrate fossils from the Cretaceous and Tertiary formations of the West, including many new and interesting mammals, birds and reptiles. Among the treasures secured during the present trip was a nearly entire skeleton of *Hesperornis regalis* Marsh, the gigantic diving bird of the Cretaceous; a second species of *Ichthyornis* (*I. celer*

Marsh), and numerous remains of Pterodactyls. The new fossils will soon be described by Professor Marsh.

NOTICE OF A NEW AND REMARKABLE FOSSIL BIRD.—One of the most interesting of recent discoveries in palæontology is the skeleton of a fossil bird, found, during the past summer in the upper Cretaceous shale of Kansas, by Prof. B. F. Mudge, who has kindly sent the specimen to me for examination. The remains indicate an aquatic bird, about as large as a pigeon, and differing widely from all known birds, in having *biconcave vertebræ*. The cervical, dorsal and caudal vertebræ, preserved, all show this character, the ends of the centra resembling those in *Plesiosaurus*. The rest of the skeleton presents no marked deviation from the ordinary avian type. The wings were large in proportion to the posterior extremities. The humerus is 58·6^{mm} in length, with the radial crest strongly developed. The femur is small, and has the proximal end compressed transversely. The tibia is slender, and 44·5^{mm} long. Its distal end is incurved, as in swimming birds, but has no supratendinal bridge. This species may be called *Ichthyornis dispar*. A more complete description will appear in an early number of this Journal.—O. C. MARSH, *American Journal of Science and Arts*.

KNOWLEDGE OF PETROLEUM IN PENNSYLVANIA IN 1771.—On page 638 of the October number of the NATURALIST is a notice of the fact that petroleum was known to exist in Pennsylvania in the last century, and the date given was about 1789. I have in my library "Kalm's Travels in North America" in which is a map "published according to act of Parliament, March 7, 1771," upon which I find marked "petroleum" on the Alleghany River about eight miles above the mouth of French Creek. The locality is marked with a little cross (†) on the east bank of the river, which would put it very nearly opposite to the mouth of Oil Creek as now known. I also find on the same map, in what is now Ohio, in the vicinity of the present location of New Philadelphia in Tuscarawas County, "Coals and whetstones:" and on the Hocking River near the southern portion of the state is found the word "coals."

Kalm makes no mention of either coals or petroleum in these localities; in fact, he did not himself travel so far to the west, but the fact of these names being on a map published in 1771 shows

that they must have been known for a considerable time prior to that date.—C. E. BESSEY.

ON AN EOCENE GENUS ALLIED TO THE LEMURS.—Professor Cope recently read a paper before the American Philosophical Society on an extinct mammal from Wyoming which he called *Anaptomorphus cemus*. The number of teeth in the lower jaw is precisely the same as in man and the higher apes, but their structure is nearer that of certain Lemurs at present existing in Madagascar and East Africa. This resemblance is closer than has yet been discovered to exist in any fossil genus, but is somewhat diminished by the separation by suture of the two halves of the lower jaw. The animal was as large as a squirrel.

FOSSIL MONKEYS.—Dr. Forsyth Major has just published in Italy an account of certain fossil Simian remains which have lately been for the first time discovered in Italy, and which he refers to a species closely allied to the Barbary ape, *Macacus inuus*, still found at Gibraltar. To this account the writer appends a history of all fossil *Quadrupedia* at present known. Of these, seven species belong to Pliocene and Quaternary, ten to Miocene, and three to Eocene strata. No fossil Lemuridæ have yet been discovered; the fossils as yet found in S. America belonging to the Platyrrhini, still peculiar to the Neotropical region. All the rest belong to the Catarrhini, and some to the anthropomorphous genera; these have all been found in the old world, but while some occurred in India, others inhabited France, Germany, Greece and England.—A. W. B.

ON SOME OF PROFESSOR COPE'S RECENT INVESTIGATIONS.—In the *NATURALIST* for November last (p. 669), Prof. E. D. Cope has a paper on the "Coal Beds of Wyoming," in which he claims to have made the discovery that these strata are of Cretaceous age. This, however, was already known to every one familiar with the geology of that region. The existence of Cretaceous coal in various parts of the Green River basin had previously been established by Mr. Meek, Messrs. King and Emmons, and myself, although Professor Cope makes no reference to our researches. Any one wishing to consult the recent literature on this subject will find it cited in the "*American Journal of Science*" for December 1872, page 489.

In the December NATURALIST (page 773), there is another paper by Prof. Cope on the "Proboscidiæ of the American Eocene." The discoveries here claimed rest on an equally unsatisfactory basis. The species mentioned had apparently all or nearly all been previously described by Dr. Leidy and myself, the type species, *Tinoceras anceps* Marsh, dating back to June, 1871. Some of the characters given by Prof. Cope, *e.g.*, the large upper incisors and absence of canines, do not, indeed, apply to the species I have described; but I feel quite sure that Prof. Cope's haste has unfortunately led him to mistake canines for incisors. On several other points, especially the position of the horns and structure of the skull, I believe Prof. Cope to be equally wrong. The animals described evidently belong to the order which I have called *Dinocerea* (Amer. Journ. Sci., Oct. 1872, p. 344). Their true characters and affinities, I propose soon to discuss fully elsewhere. — O. C. MARSH.

DISCOVERY OF EXTINCT MAMMALS IN THE VICTORIA CAVES, SETTLE, YORKSHIRE. — This famous bone-cave has hitherto produced only remains of different ages from the Neolithic period to the present. Recent excavations have yielded, however, at the depth of about twenty feet, bones of the elephant, rhinoceros, hyena, a crushed canine of a much larger carnivore, etc. The elephant's teeth found belong to a young individual, and the number of gnawed bones and other indications, that the cave had been a den of some larger carnivores, render it probable that the elephant was dragged into it by them. — A. W. B.

MICROSCOPY.

MICROSCOPY AT THE VIENNA EXPOSITION. — The Exposition of the Industry of all nations to be held in Vienna this year, will afford microscopists a rare opportunity to exhibit to the world the results of their ingenuity in contrivance, or of their skill in construction, of microscopical apparatus and appliances. General T. B. Van Buren is Commissioner General for the United States, and President F. A. P. Barnard is chairman of the Advisory Committee on Group XIV, in which are included optical instruments. Persons desirous of contributing to the exhibition of American art on this occasion are requested to communicate immediately with any of the following persons who are the microscopical